



9.34 Borough of Riverdale

This section presents the jurisdictional annex for the Borough of Riverdale.

9.34.1 Hazard Mitigation Plan Point of Contact

The following individuals have been identified as the hazard mitigation plan's primary and alternate points of contact.

Primary Point of Contact	Alternate Point of Contact
Name: Daniel Sturm Address: 91 Newark Pompton Tpke, Riverdale, NJ 07457 Phone: 973-277-5178 E-mail: chief@riverdalefd.net	Name: James Regeling, Jr. Address: 91 Newark Pompton Tpke, Riverdale, NJ 07457 Phone: 973-714-5181 E-mail: asst.chief@riverdalefd.net

9.34.2 Municipal Profile

The Borough of Riverdale is located in the northeastern region of Morris County; it is bordered by Butler and Kinnelon to the west, Pequannock to the south and Pompton Lakes and Bloomingdale (Morris County) to the east and north. Major waterways that flow through the Borough include the Pequannock River, which flows along its northern border, and the Pompton River, which flows along the eastern border of the Borough. According to the U.S. Census, the 2010 population for the Borough of Riverdale was 3,559, and the total area is 2.09 square miles, 2.02 square miles of land and 0.07 square miles of water. There are no unincorporated communities located within the Borough.

The Township is also located in the New Jersey Highlands Region, one of the 88 municipalities protected by, and subject to, the provisions of the Highlands Water Protection and Planning Act. 1,319 acres of the Borough's total area (approximately 99%) are located within the Highlands Planning Area.

Growth/Development Trends

The following table summarizes recent residential/commercial development since 2010 to present and any known or anticipated major residential/commercial development and major infrastructure development that has been identified in the next five years within the municipality. Refer to the map in section 9.34.9 of this annex which illustrates the hazard areas along with the location of potential new development.

Table 9.34-1. Growth and Development

Property or Development Name	Type (e.g., Res., Comm.)	# of Units/ Structures	Location (address and/or Block & Lot)	Known Hazard Zone(s)	Description/Status of Development
Recent Development from 2010 to present					
The Grande	Residential	3 Bldgs; 640 Units	Sanctuary Blvd - 40.2 Wharton Ct – 40.3	None	4.5 Stories completed
Alexan at Riverdale	Residential	2 Bldgs; 140 Units	6000 Riverdale Rd	Flood: 1%; NEHRP: E	4.5 Stories completed
Known or Anticipated Development in the Next Five Years					
No Known or Anticipated Development					

* Only location-specific hazard zones or vulnerabilities identified.



9.34.3 Natural Hazard Event History Specific to the Municipality

Morris County has a history of natural and non-natural hazard events as detailed in Volume I, Section 5.0 of this plan. A summary of historical events is provided in each of the hazard profiles and includes a chronology of events that have affected the County and its municipalities. For the purpose of this plan update, events that have occurred in the County from 2008 to present were summarized to indicate the range and impact of hazard events in the community. Information regarding specific damages is included, if available, based on reference material or local sources. This information is presented in the table below. For details of these and additional events, refer to Volume I, Section 5.0 of this plan.

Table 9.34-2. Hazard Event History

Dates of Event	Event Type	FEMA Declaration # (If Applicable)	County Designated?	Summary of Damages/Losses
February 12, 2009	High Wind	N/A	N/A	Fire, Police and EMS responded to calls of wires down across Route 23 North; Elevator entrapment; Closed Route 23
March 12 – April 15, 2010	Severe Storms and Flood	DR-1897	Yes	Severe flood 3/14 to 3/15; Police, Fire and DPW needed. 25 pump details, resident utilities were secured, in some cases residents were evacuated from their homes; Police, Fire and DPW overtime
December 26 – 27, 2010	Severe Winter Storm and Snowstorm	DR-1954	Yes	DPW overtime for snow removal
March 7, 2011	Flood	N/A	N/A	Severe flooding 3/11 to 3/12; Police, Fire and DPW needed 9 pump details, resident utilities were secured, in some cases residents were evacuated from their homes; Police, Fire and DPW overtime
August 26 – September 5, 2001	Hurricane Irene	EM-3332 DR-4021	Yes Yes	Severe flooding 8/28-9/2; Police, Fire and DPW needed; 19 pump details, resident utilities were secured, in some cases residents were evacuated from their homes; Police, Fire and DPW overtime
October 2, 2011	Severe Storm	DR-4048	Yes	Police, Fire and DPW numerous calls for assistance; wires down, tree removal and snow removal; Police, Fire and DPW overtime
October 26 – November, 2012	Hurricane Sandy	EM-3354 DR-4086	Yes Yes	Shelter open for 5 days for loss of power; Police, Fire and DPW overtime for 5 days

9.34.4 Hazard Vulnerabilities and Ranking

The hazard profiles in Section 5.0 of this plan have detailed information regarding each plan participant's vulnerability to the identified hazards. The following summarizes the hazard vulnerabilities and their ranking in the Borough of Riverdale. For additional vulnerability information relevant to this jurisdiction, refer to Section 5.0.

Hazard Risk/Vulnerability Risk Ranking

The table below summarizes the hazard risk/vulnerability rankings of potential hazards for the Borough of Riverdale.



Table 9.34-3. Hazard Risk/Vulnerability Risk Ranking

Hazard type	Estimate of Potential Dollar Losses to Structures Vulnerable to the Hazard ^{a, c}	Probability of Occurrence	Risk Ranking Score (Probability x Impact)	Hazard Ranking ^b
Drought	Damage estimate not available	Frequent	27	Medium
Dam Failure	Damage estimate not available	Rare	6	Low
Earthquake	500-year MRP: \$200,700 2,500-year MRP: \$5,643,878	Occasional	32	High
Extreme Temperature	Damage estimate not available	Frequent	27	Medium
Flood	1% Annual Chance: \$2,599,977	Frequent	18	Medium
Geological Hazards	Exposed to Class A and Class B: \$3,267,047	Frequent	18	Medium
Severe Storm	100-Year MRP: \$805,891 500-year MRP: \$2,174,150 Annualized: \$55,002	Frequent	48	High
Winter Storm	1% GBS: \$12,465,803 5% GBS: \$62,329,017	Frequent	54	High
Wildfire	Estimated Value Exposed to Extreme, Very High and High: \$7,175,865	Rare	6	Low
Disease Outbreak	Damage estimate not available	Frequent	36	High
Hazardous Materials	Damage estimate not available	Frequent	36	High
Infestation	Damage estimate not available	Frequent	18	Medium

Notes:

- Building damage ratio estimates based on FEMA 386-2 (August 2001)
- The valuation of general building stock and loss estimates was based on custom inventory for the municipality.
High = Total hazard priority risk ranking score of 31 and above
Medium = Total hazard priority risk ranking of 20-30+
Low = Total hazard risk ranking below 20
- Loss estimates for the severe storm and severe winter storm hazards are structural values only and do not include the value of contents.
- Loss estimates for the flood and earthquake hazards represent both structure and contents.
- The HAZUS-MH earthquake model results are reported by Census Tract.

National Flood Insurance Program (NFIP) Summary

The following table summarizes the NFIP statistics for the Borough of Riverdale.

Table 9.34-4. NFIP Summary

Municipality	# Policies (1)	# Claims (Losses) (1)	Total Loss Payments (2)	# Rep. Loss Prop. (1)	# Severe Rep. Loss Prop. (1)	# Policies in 100-year Boundary (3)
Borough of Riverdale	74	101	\$865,564.59	20	0	51

Source: FEMA Region 2, 2014

(1) Policies, claims, repetitive loss and severe repetitive loss statistics provided by FEMA Region 2, and are current as of 9/30/2014. Please note the total number of repetitive loss properties includes the severe repetitive loss properties. The number of claims represents claims closed by 9/30/14.

(2) Total building and content losses from the claims file provided by FEMA Region 2.

(3) The policies inside and outside of the flood zones is based on the latitude and longitude provided by FEMA Region 2 in the policy file.

Notes: FEMA noted that where there is more than one entry for a property, there may be more than one policy in force or more than one GIS possibility.

A zero percentage denotes less than 1/100th percentage and not zero damages or vulnerability as may be the case.

Number of policies and claims and claims total exclude properties located outside County boundary, based on provided latitude and longitude.



Critical Facilities

The table below presents HAZUS-MH estimates of the damage and loss of use to critical facilities in the community as a result of a 1- and 0.2-percent annual chance flood events.

Table 9.34-5. Potential Flood Losses to Critical Facilities

Name	Type	Exposure		Potential Loss from 1% Flood Event		
		1% Event	0.2% Event	Percent Structure Damage	Percent Content Damage	Days to 100-Percent ⁽¹⁾
Filtra Corp.	Hazardous Material		X	-	-	-

Source: HAZUS-MH 2.1

Note (1): HAZUS-MH 2.1 provides a general indication of the maximum restoration time for 100% operations. Clearly, a great deal of effort is needed to quickly restore essential facilities to full functionality; therefore this will be an indication of the maximum downtime (HAZUS-MH 2.1 User Manual).

Note (2): In some cases, a facility may be located in the DFIRM flood hazard boundary; however HAZUS did not calculate potential loss. This may be because the depth of flooding does not amount to any damages to the structure according to the depth damage function used in HAZUS for that facility type. Further, HAZUS-MH may estimate potential damage to a facility that is outside the DFIRM because the model generated a depth grid beyond the DFIRM boundaries.

NA Not available

X Facility located within the DFIRM boundary

- Not calculated by HAZUS-MH 2.1

Other Vulnerabilities Identified

According to the 2010 preliminary FEMA Flood Insurance Study (FIS) for Morris County, low-lying areas of the Borough of Riverdale are subject to periodic flooding caused by the overflow of the Pequannock River (FEMA FIS 2010).

9.34.5 Capability Assessment

This section identifies the following capabilities of the local jurisdiction:

- Planning and regulatory capability
- Administrative and technical capability
- Fiscal capability
- Community classification
- National Flood Insurance Program
- Integration of Mitigation Planning into Existing and Future Planning Mechanisms

Planning and Regulatory Capability

The table below summarizes the regulatory tools that are available to the Borough of Riverdale.

Table 9.34-6. Planning and Regulatory Tools

Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Planning Capability				



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Master Plan	Yes - January 11, 2008	Local	Planning Board	The Master Plan of Riverdale, January 2008
Capital Improvements Plan	Yes	Local	Administration	2014
Floodplain Management / Basin Plan	Yes	Local	OEM working with all depts.	Flood Acquisition Plan (with Morris County)
Stormwater Management Plan	Yes - May 2006	Local	Planning Board	Municipal Stormwater Management Plan for Borough of Riverdale, Revised Through January 2007
Open Space Plan	Yes	Local	Planning Board	The Master Plan of Riverdale, January 2008
Stream Corridor Management Plan	No			
Watershed Management or Protection Plan	No			
Economic Development Plan	No			
Comprehensive Emergency Management Plan	Yes - 2013	Local	OEM	EOP
Emergency Response Plan	Yes - 2013	Local	OEM	EOP
Post-Disaster Recovery Plan	Yes - 2013	Local	OEM	EOP
Transportation Plan	Yes - 2013	Local	OEM	EOP
Strategic Recovery Planning Report	Yes - 2013	Local	OEM	EOP
Other Plans:	Yes	Local	Planning Board	Riverdale Sewer Master Plan (12/21/04) Community Forestry Management Plan (March 2008) Natural Resources Inventory (April 2007)
Regulatory Capability				
Building Code	Yes	State & Local	Planning Board	State Uniform Construction Code Act (N.J.S. 52:27D-119 et seq.) Chapter 149
Zoning Ordinance	Yes - 2014	Local	Zoning Board	Ordinance # 12-2011 Chapter 168
Subdivision Ordinance	Yes - 1991	Local	Zoning Board	Chapter 37
NFIP Flood Damage Prevention Ordinance	Yes	Federal, State, Local	Construction Code Official	Chapter 104
NFIP: Cumulative Substantial Damages	Yes - 2014	Federal, State, Local	Construction Code Official	Chapter 104
NFIP: Freeboard	Yes	State, Local	Construction Code Official	Chapter 149
Growth Management Ordinances	No			
Site Plan Review Requirements	Yes - 1991	Local	Construction Code Official	Chapter 149
Stormwater Management Ordinance	Yes - 2010	Local		Chapter 145 of the Revised General Ordinance
Municipal Separate Storm Sewer System (MS4)	No			
Natural Hazard Ordinance	No			
Post-Disaster Recovery Ordinance	No			
Real Estate Disclosure Requirement	N/A	State	Division of Consumer Affairs	N.J.A.C. 13:45A-29.1
Other [Special Purpose	Yes - 1991	Local	Construction	Chapter 145



Tool / Program (code, ordinance, plan)	Do you have this? (Yes/No) If Yes, date of adoption or update	Authority (local, county, state, federal)	Dept. /Agency Responsible	Code Citation and Comments (Code Chapter, name of plan, explanation of authority, etc.)
Ordinances (i.e., sensitive areas, steep slope)]			Code Official	

Administrative and Technical Capability

The table below summarizes potential staff and personnel resources available to the Borough of Riverdale.

Table 9.34-7. Administrative and Technical Capabilities

Resources	Is this in place? (Yes or No)	Department/ Agency/Position
Administrative Capability		
Planning Board	Yes	Planning Board
Mitigation Planning Committee	No	
Environmental Board/Commission	No	
Open Space Board/Committee	No	
Economic Development Commission/Committee	No	
Maintenance Programs to Reduce Risk	Yes	DPW
Mutual Aid Agreements	Yes	Neighboring Communities
Technical/Staffing Capability		
Planner(s) or Engineer(s) with knowledge of land development and land management practices	Yes	Planning Board Professional Planner and Engineering
Engineer(s) or Professional(s) trained in construction practices related to buildings and/or infrastructure	Yes	Planning Board Professional Planner and Engineering
Planners or engineers with an understanding of natural hazards	Yes	Planning Board Professional Planner and Engineering
NFIP Floodplain Administrator	Yes	Paul Darmofalski – Borough Engineer
Surveyor(s)	Yes	Outside contract
Personnel skilled or trained in GIS and/or Hazus-MH applications	No	
Scientist familiar with natural hazards	No	
Emergency Manager	Yes	Daniel Sturm
Grant Writer(s)	No	
Staff with expertise or training in benefit/cost analysis	No	
Professionals trained in conducting damage assessments	Yes	Borough Engineer



Fiscal Capability

The table below summarizes financial resources available to the Borough of Riverdale.

Table 9.34-8. Fiscal Capabilities

Financial Resources	Accessible or Eligible to Use (Yes/No/Don't Know)
Community Development Block Grants (CDBG, CDBG-DR)	No
Capital Improvements Project Funding	Yes
Authority to Levy Taxes for specific purposes	No
User fees for water, sewer, gas, or electric service	No
Impact Fees for homebuyers or developers of new development/homes	No
Stormwater Utility Fee	No
Incur debt through general obligation bonds	Yes
Incur debt through special tax bonds	No
Incur debt through private activity bonds	No
Withhold public expenditures in hazard-prone areas	No
Other Federal or State Funding Programs	Yes
Open Space Acquisition Funding Programs	Yes – Morris County Flood Mitigation Program (acquisitions)
Other	DK

Community Classifications

The table below summarizes classifications for community program available to the Borough of Riverdale.

Table 9.34-9. Community Classifications

Program	Do you have this? (Yes/No)	Classification (if applicable)	Date Classified (if applicable)
Community Rating System (CRS)	Yes	Class 8	May 1, 2014
Building Code Effectiveness Grading Schedule (BCEGS)	No		
Public Protection (ISO Fire Protection Classes 1 to 10)	No		
Storm Ready	No		
Firewise	No		
Disaster/Safety Programs in/for Schools	No		
Organizations with Mitigation Focus (advocacy group, non-government)	No		
Public Education Program/Outreach (through website, social media)	Yes		
Public-Private Partnerships	Yes		

N/A = Not applicable. NP = Not participating. - = Unavailable. TBD = To be determined.

The classifications listed above relate to the community's ability to provide effective services to lessen its vulnerability to the hazards identified. These classifications can be viewed as a gauge of the community's capabilities in all phases of emergency management (preparedness, response, recovery and mitigation) and are used as an underwriting parameter for determining the costs of various forms of insurance. The CRS class



applies to flood insurance while the BCEGS and Public Protection classifications apply to standard property insurance. CRS classifications range on a scale of 1 to 10 with class 1 being the best possible classification, and class 10 representing no classification benefit. Firewise classifications include a higher classification when the subject property is located beyond 1000 feet of a creditable fire hydrant and is within 5 road miles of a recognized Fire Station.

Criteria for classification credits are outlined in the following documents:

- The Community Rating System Coordinators Manual
- The Building Code Effectiveness Grading Schedule
- The ISO Mitigation online ISO's Public Protection website at <http://www.isomitigation.com/ppc/0000/ppc0001.html>
- The National Weather Service Storm Ready website at <http://www.weather.gov/stormready/howto.htm>
- The National Firewise Communities website at <http://firewise.org/>

Self-Assessment of Capability

The table below provides an approximate measure of Riverdale's capability to work in a hazard-mitigation capacity and/or effectively implement hazard mitigation strategies to reduce hazard vulnerabilities.

Table 9.34-10. Self-Assessment Capability for the Municipality

Area	Degree of Hazard Mitigation Capability		
	Limited (If limited, what are your obstacles?)*	Moderate	High
Planning and Regulatory Capability	X- Limited Staff		
Administrative and Technical Capability	X- Limited Staff		
Fiscal Capability	X- Limited Staff		
Community Political Capability	X- Limited Staff		
Community Resiliency Capability	X- Limited Staff		
Capability to Integrate Mitigation into Municipal Processes and Activities.	X- Limited Staff		

National Flood Insurance Program

NFIP Floodplain Administrator

Paul Darmofalski – Borough Engineer

Flood Vulnerability Summary

A formal list of flood-damaged properties is maintained by the Borough; however, there is no interest in mitigation by property owners. The Borough currently makes Substantial Damage estimates for emergency events. The Borough utilizes Green Acres Funding and County Open Space Funding for mitigation projects.

Resources

The NFIP FPA is the sole person responsibility for floodplain administration in the Borough. The NFIP administration services provided by the FPA include permit review and damage assessment. The Borough currently provides education and outreach to the community in regards to flood hazard and risk and flood risk reduction with the help of the Community Rating System program. To receive a better understanding of the



position's responsibilities, the FPA indicated that he would consider attending continuing education and/or certification training on floodplain management if it were offered in the County for local FPAs. Barriers to running an effective floodplain management program in the Borough include lack of funding.

Compliance History

The Borough is currently in good-standing in the NFIP, and its most recent compliance audit was completed in 2013.

Regulatory

The Borough is currently enrolled in the Community Rating System program as a Class 8 community.

Integration of Hazard Mitigation into Existing and Future Planning Mechanisms

For a community to succeed in reducing long-term risk, hazard mitigation must be integrated into the day-to-day local government operations. As part of this planning effort, each community was surveyed to obtain a better understanding of their community's progress in plan integration. A summary is provided below. In addition, the community identified specific integration activities that will be incorporated into municipal procedures.

Planning

The 2011 Master Plan provides many goals and initiatives to protecting environmentally sensitive lands and integrating hazard mitigation into the Borough's planning process. The Pequannock River is a major source of flooding in the Township; the Master Plan proposes the implementation of green infrastructure throughout the Borough, as well as decrease the total impervious cover, to mitigate increased stormwater runoff. The Plan also discourages development within the floodplain and floodplain buffers. Transit-oriented development is also proposed for the Riverdale Quarry.

Both the Forestry Management Plan and Natural Resource Inventory of 2008 provided information about the natural resources and environmentally sensitive lands in the Borough. The Forestry Management Plan proposes to identify and remove potentially hazardous trees, which will reduce damages during severe storm and winter storm events, and the Natural Resource Inventory details the importance of protecting steep slopes, riparian buffers, floodplains, wetlands and forested land; the NRI also addresses reducing impervious cover and maximizing infiltration of stormwater runoff.

The Borough of Riverdale participates in the County's Flood Mitigation Program (FMP) and has an approved Flood Acquisition Plan (FLAP). The Morris County FMP is the first dedicated, county-level flood acquisition program in the State of New Jersey. The FMP allows Morris County to assist municipalities in moving people out of harm's way, lowering municipal costs due to intense flooding episodes, and create natural flood capture and storage areas which protect the remaining homes and businesses. The FMP is funded by the Morris County Open Space tax and provides grant monies for municipalities to purchase flood-prone residential properties. In addition to MATCH funding available for projects with state or federal monies, Morris County has CORE funding in which the County takes the lead grant role, providing up to 75% of the cost of acquisition. To access this CORE funding, a municipality must have a FLAP. The FLAP is a dynamic, essential tool for understanding the unique flood hazards to residential homes within each community. Working closely with the municipality, Morris County creates this detailed, comprehensive analysis of the historic and current flood risks free of charge. A wide array of data is utilized from sources such as: FEMA, National Flood Insurance Program, USACE Flood Studies, USGS stream gage data, topography and soil analysis. All land acquired with MATCH and CORE funding within the FMP is permanently deed-restricted,



preserved open space, available for public use as an active or passive recreation area. The acquired land is municipal-owned and managed in perpetuity.

Other municipal plans include an Open Space Plan, Floodplain Management Plan, Comprehensive Emergency Management Plan, Emergency Response Plan, and Post-Disaster Recovery Plan.

Regulatory and Enforcement

The Township has multiple ordinances pertaining to the mitigation of hazards. These ordinances include the NFIP Flood Damage Prevention Ordinance, a stormwater management ordinance and ordinances for steep slopes and sensitive environmental areas.

Operational and Administration

Montville has implemented maintenance programs in order to reduce risk, and has administrative and police mutual aid agreements that allow surrounding communities to provide and receive additional support during an emergency event.

Fiscal

The Township has a multitude of fiscal capabilities for funding mitigation actions and projects. The Township has access state and federal funding sources, as well as local fiscal resources that include capital improvements funding and open space acquisition funding.

Education and Outreach

The Borough provides information regarding emergency events on their Facebook page, as well as providing residents emergency notifications from the Office of Emergency Management through the Code Red notification system. Residents and businesses can sign up to receive Code Red notifications on municipal website.

9.34.6 Mitigation Strategy and Prioritization

This section discusses past mitigations actions and status, describes proposed hazard mitigation initiatives, and prioritization.

Past Mitigation Initiative Status

The following table indicates progress on the community's mitigation strategy identified in the 2010 Plan. Actions that are carried forward as part of this plan update are included in the following subsection in its own table with prioritization. Previous actions that are now on-going programs and capabilities are indicated as such in the following table and may also be found under 'Capability Assessment' presented previously in this annex.



Table 9.34-11. Past Mitigation Initiative Status

2010 Mitigation Action	Lead	Status (In progress, No progress, Complete)	Describe Status • Please describe what was accomplished and indicate % complete. • If there was no progress, indicate what obstacles/delays encountered? • If there was progress, how is/was the action being funded (e.g., FEMA HMGP grant, local budget)?	Next Step (Include in 2015 HMP or Discontinue)	Describe Next Step • If including action in 2015 HMP, revise/reword to be more specific (as appropriate). • If discontinuing, explain why.
Riverdale 1: Dredge Pequannock River to mitigate flooding on the following streets: Williams Street, Harrison Road, Stratford Place, Riverview Terrace, Fernwood Street, Crescent Road, Hemlock Street, Linden Street, Riverdale Road, Morris Ave, and Kenner Court	Riverdale DPW	In Progress	75% Complete Awaiting additional funding to complete	Include in 2015 HMP	Continue to dredge remaining 25% of Pequannock River once funding is approved
Riverdale 2: Elevation/acquisition of seven floodprone properties on Harrison Street	Riverdale OEM	In Progress	15% complete Awaiting offers to be accepted Funding secure	Include in 2015 HMP	Continue to acquire the properties
Riverdale 3: New roof for Police Station/Municipal Building (EOC/records storage) on 91 Newark Pompton Tpke	Riverdale Police Chief	In Progress	30% complete Contracts approved work to begin November 2014	Discontinue	Work should be complete prior to 2015
Riverdale 4: Backup power (generator) for Fire Station located on Post Lane	Riverdale OEM	In Progress	10% complete Pending approval from FEMA HMP grant	Discontinue	If funding is not obtained, would need to include in 2015 plan
Riverdale 5: Engineering study to analyze risk of dike on Home Depot Site, Route 23	Riverdale Engineer	No Progress	Awaiting additional funding to complete	Include in 2015 HMP	Secure funding and conduct study
Riverdale 6: Backup power (generator) for DPW located at Stratford Place	Riverdale OEM	Complete	Complete	Discontinue	Complete
Riverdale 7: Elevation/acquisition of one floodprone property on Riverview Terrace	Riverdale OEM	In Progress	50% complete 1 property pending closing	Discontinue	Expected to close prior to 2015
Riverdale 9: Elevation/acquisition of two repetitive loss properties on Stratford Place	Riverdale OEM	In progress	Awaiting additional funding to complete	Include in 2015 HMP	Looking to acquire properties and secure funding
Riverdale 10: Develop all-hazards public education and outreach program for hazard mitigation and preparedness	County and Municipal OEM	No Progress	Needs to be revisited in 2015	Include in 2015 HMP	Will develop a plan of action after new hazard mitigation risk assessment is completed
Riverdale 11: Elevation/acquisition of three floodprone properties on Williams Street	Riverdale OEM	No Progress	New Item Funding constraints	Include in 2015 HMP	Looking to acquire properties and funding; include in 2015 HMP
Riverdale 12: Elevation/acquisition of two floodprone properties on Hamburg Tpke	Riverdale OEM	In Progress	Awaiting additional funding to complete	Include in 2015 HMP	Looking to acquire properties and secure funding
Riverdale 13: Engineering study to analyze risk of two waterways on Degraw Rd and Matthews Ave	Riverdale OEM	No Progress	New Item Funding Constraints	Include in 2015 HMP	Trying to obtain funding to complete the study; include in 2015 HMP
Riverdale 14: Repair or replacement of 4 early warning sirens in the borough	Riverdale OEM	No Progress	New Item Funding Constraints	Include in 2015 HMP	Trying to obtain funding to begin project; include in 2015 HMP



Proposed Hazard Mitigation Initiatives for the Plan Update

The Borough of Riverdale participated in a mitigation action workshop in January 2015 and was provided the following FEMA publications to use as a resource as part of their comprehensive review of all possible activities and mitigation measures to address their hazards: FEMA 551 'Selecting Appropriate Mitigation Measures for Floodprone Structures' (March 2007) and FEMA 'Mitigation Ideas – A Resource for Reducing Risk to Natural Hazards' (January 2013).

Table 9.34-12 summarizes the comprehensive-range of specific mitigation initiatives the Borough of Riverdale would like to pursue in the future to reduce the effects of hazards. Some of these initiatives may be previous actions carried forward for this plan update. These initiatives are dependent upon available funding (grants and local match availability) and may be modified or omitted at any time based on the occurrence of new hazard events and changes in municipal priorities. Both the four FEMA mitigation action categories and the six CRS mitigation action categories are listed in the table below to further demonstrate the wide-range of activities and mitigation measures selected.

As discussed in Section 6, 14 evaluation/prioritization criteria are used to complete the prioritization of mitigation initiatives. For each new mitigation action, a numeric rank is assigned (-1, 0, or 1) for each of the 14 evaluation criteria to assist with prioritizing your actions as 'High', 'Medium', or 'Low.' The table below summarizes the evaluation of each mitigation initiative, listed by Action Number.

Table 9.34-13 provides a summary of the prioritization of all proposed mitigation initiatives for the Plan update.



Table 9.34-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
RB-1 (Old Riverdale-1)	Dredge Pequannock River to mitigate flooding on the following streets: Williams Street, Harrison Road, Stratford Place, Riverview Terrace, Fernwood Street, Crescent Road, Hemlock Street, Linden Street, Riverdale Road, Morris Ave, and Kenner Court	Existing	Flood	G-4	Riverdale DPW	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
RB-2 (Old Riverdale-2)	Elevation/acquisition of seven floodprone properties on Harrison Street	Existing	Flood	G-4	Riverdale OEM	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
RB-3 (Old Riverdale-5)	Engineering study to analyze risk of dike on Home Depot Site, Route 23	New	Flood	G-2, G-3	Riverdale Engineer	Medium	Low	FEMA; Municipal Budget	Short	Medium	EAP	PI, NR
RB-4 (Old Riverdale-9)	Elevation/acquisition of two repetitive loss properties on Stratford Place	Existing	Flood	G-4	Riverdale OEM	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
RB-5 (Old Riverdale-10)	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	New	All-hazard	G-1	County and Municipal OEM	Medium	Medium	Municipal Budget	Short / OG	High	EAP	PI
RB-6 (Old Riverdale-11)	Elevation/acquisition of three floodprone properties on Williams Street	Existing	Flood	G-4	Riverdale OEM	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
RB-7 (Old Riverdale-12)	Elevation/acquisition of two floodprone properties on Hamburg Tpke	Existing	Flood	G-4	Riverdale OEM	High	High	FEMA; Municipal Budget	Short	High	SIP	PP
RB-8 (Old Riverdale-13)	Engineering study to analyze risk of two waterways on Degraw Rd and Matthews Ave	New	Flood	G-2, G-3	Riverdale OEM	Medium	Low	FEMA; Municipal Budget	Short	Medium	EAP	PI, NR



Table 9.34-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
RB-9 (Old Riverdale-14)	Repair or replacement of 4 early warning sirens in the borough	Existing	All-hazard	G-4	Riverdale OEM	High	Medium	FEMA; Municipal Budget	Short	Medium	SIP	PP
RB-10	Replace and expand early warning system (sirens)	Existing	Dam Failure, Flooding, Severe Storm	G-4	Riverdale OEM	High	Medium	FEMA; Municipal Budget	Short	Medium	SIP	PP
RB-11	Secure mountainside on Overlook Ave and Rock Creek Tr to prevent additional rock slides	Existing	Geologic	G-4	Riverdale OEM	Medium	High	FEMA; Municipal Budget	Short	Medium	SIP	PP
RB-12	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding from FEMA and local match availability. Specifically identified are properties in the following areas: • Harrison Rd • Williams St • Riverview Tr • Hamburg Tpk (Near Bloomingdale Border)											
	See above	Existing	Dam Failure, Flooding, Severe Storm	G-4	Riverdale OEM	High	High	FEMA; Municipal Budget	DOF	High	SIP	PP
RB-13	Develop and implement a post-event damage assessment program, including the following elements: <ul style="list-style-type: none"> • Conduct public outreach/education (see Public Education and Awareness Initiatives above) to inform property owners of the need to report property damage and obtain required permitting when making repairs. • Develop and organize local resources to conduct post-event damage assessments, including substantial damage determinations as warranted. • Develop an inventory (file system and/or database) of losses (incl. loss of service, property damage, economic losses, etc.) as reported to and/or identified by the Town/Village (e.g. building permit process). 											
	See above	Existing	All-Hazard	G-1, G-2, G-3	Riverdale OEM	Medium	Medium	Municipal Budget	Short	High	EAP	PI



Table 9.34-12. Proposed Hazard Mitigation Initiatives

Initiative	Mitigation Initiative	Applies to New and/or Existing Structures*	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority	Mitigation Category	CRS Category
RB-14	Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. See following related Community Assistance Visit (CAV) initiative.	N/A	Flood	G-1, G-3	NFIP FPA; Municipal OEM	Medium - High	Low	Municipal Budget	Short (year 1)	High	EAP	PI
RB-15	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. This is a part of the process of joining CRS	N/A	Flood	G-3	NFIP FPA	Medium	Low	Municipal Budget	Short (year 1)	High	EAP	PI
RB-16	Have designated NFIP Floodplain Administrator (FPA), and other local officials who would benefit, become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM) and New Jersey Association for Floodplain Management (NJAFM), and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis (BCA) and Substantial Damage Estimation (SDE).	N/A	Flood	G-1, G-3	NFIP FPA	Medium	Low	Municipal Budget	Short (DOF)	High	EAP	PI
RB-17	Install backup power at the following critical facilities in the Borough <ul style="list-style-type: none"> Fire Headquarters Community Center (Borough Shelter) Water Dept. Pumping Station (Back-up) 											
	See above	Existing	All-Hazard	G-3, G-4	Riverdale DPW	High	Medium-High	FEMA; Municipal Budget	Short (DOF)	High	SIP	PP
RB-18	Enhance/expand tree maintenance program	Existing	All-Hazard	G-3, G-4	Riverdale DPW	Medium-High	Medium	Municipal budget	Short	Medium	NSP	NR
RB-19	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	N/A	All-Hazard	G-2, G-3	County and Municipal OEM	Medium	Low	Municipal Budget	Short	Medium	EAP	ES

**Notes:**

Not all acronyms and abbreviations defined below are included in the table.

*Does this mitigation initiative reduce the effects of hazards on new and/or existing buildings and/or infrastructure? Not applicable (N/A) is inserted if this does not apply.

Acronyms and Abbreviations:

CAV	Community Assistance Visit
CRS	Community Rating System
DPW	Department of Public Works
FEMA	Federal Emergency Management Agency
FPA	Floodplain Administrator
HMA	Hazard Mitigation Assistance
N/A	Not applicable
NFIP	National Flood Insurance Program
NJDEP	New Jersey Department of Environmental Protection
NJOEM	New Jersey Office of Emergency Management
OEM	Office of Emergency Management

Potential FEMA HMA Funding Sources:

FMA	Flood Mitigation Assistance Grant Program
HMGP	Hazard Mitigation Grant Program
PDM	Pre-Disaster Mitigation Grant Program
RFC	Repetitive Flood Claims Grant Program (discontinued 2015)
SRL	Severe Repetitive Loss Grant Program (discontinued 2015)

Timeline:

Short	1 to 5 years
Long Term	5 years or greater
OG	On-going program
DOF	Depending on funding

Costs:

Where actual project costs have been reasonably estimated:

Low	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where actual project costs cannot reasonably be established at this time:

Low	Possible to fund under existing budget. Project is part of, or can be part of an existing on-going program.
Medium	Could budget for under existing work plan, but would require a reapportionment of the budget or a budget amendment, or the cost of the project would have to be spread over multiple years.
High	Would require an increase in revenue via an alternative source (i.e., bonds, grants, fee increases) to implement. Existing funding levels are not adequate to cover the costs of the proposed project.

Benefits:

Where possible, an estimate of project benefits (per FEMA's benefit calculation methodology) has been evaluated against the project costs, and is presented as:

Low=	< \$10,000
Medium	\$10,000 to \$100,000
High	> \$100,000

Where numerical project benefits cannot reasonably be established at this time:

Low	Long-term benefits of the project are difficult to quantify in the short term.
Medium	Project will have a long-term impact on the reduction of risk exposure to life and property, or project will provide an immediate reduction in the risk exposure to property.
High	Project will have an immediate impact on the reduction of risk exposure to life and property.

Mitigation Category:

- Local Plans and Regulations (LPR) – These actions include government authorities, policies or codes that influence the way land and buildings are being developed and built.
- Structure and Infrastructure Project (SIP)- These actions involve modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area. This could apply to public or private structures as well as critical facilities and infrastructure. This type of action also involves projects to construct manmade structures to reduce the impact of hazards.
- Natural Systems Protection (NSP) – These are actions that minimize damage and losses, and also preserve or restore the functions of natural systems.
- Education and Awareness Programs (EAP) – These are actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. These actions may also include participation in national programs, such as StormReady and Firewise Communities

CRS Category:



- *Preventative Measures (PR)* - Government, administrative or regulatory actions, or processes that influence the way land and buildings are developed and built. Examples include planning and zoning, floodplain local laws, capital improvement programs, open space preservation, and storm water management regulations.
- *Property Protection (PP)* - These actions include public activities to reduce hazard losses or actions that involve (1) modification of existing buildings or structures to protect them from a hazard or (2) removal of the structures from the hazard area. Examples include acquisition, elevation, relocation, structural retrofits, storm shutters, and shatter-resistant glass.
- *Public Information (PI)* - Actions to inform and educate citizens, elected officials, and property owners about hazards and potential ways to mitigate them. Such actions include outreach projects, real estate disclosure, hazard information centers, and educational programs for school-age children and adults.
- *Natural Resource Protection (NR)* - Actions that minimize hazard loss and also preserve or restore the functions of natural systems. These actions include sediment and erosion control, stream corridor restoration, watershed management, forest and vegetation management, and wetland restoration and preservation.
- *Structural Flood Control Projects (SP)* - Actions that involve the construction of structures to reduce the impact of a hazard. Such structures include dams, setback levees, floodwalls, retaining walls, and safe rooms.
- *Emergency Services (ES)* - Actions that protect people and property during and immediately following a disaster or hazard event. Services include warning systems, emergency response services, and the protection of essential facilities



Table 9.34-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
RB-1 (Old Riverdale-1)	Dredge Pequannock River to mitigate flooding on streets in Borough	1	1	0	0	0	0	0	0	0	0	0	1	0	0	3	Low
RB-2 (Old Riverdale-2)	Elevation/acquisition of seven floodprone properties on Harrison Street	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
RB-3 (Old Riverdale-5)	Engineering study to analyze risk of dike on Home Depot Site, Route 23	0	0	1	1	0	0	1	0	0	1	0	1	0	0	5	Medium
RB-4 (Old Riverdale-9)	Elevation/acquisition of two repetitive loss properties on Stratford Place	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
RB-5 (Old Riverdale-10)	Develop all-hazards public education and outreach program for hazard mitigation and preparedness	1	1	1	1	0	1	1	1	1	1	1	1	0	0	11	High
RB-6 (Old Riverdale-11)	Elevation/acquisition of three floodprone properties on Williams Street	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
RB-7 (Old Riverdale-12)	Elevation/acquisition of two floodprone properties on Hamburg Tpke	1	1	1	1	1	1	0	1	1	0	1	1	0	0	10	Medium
RB-8 (Old Riverdale-13)	Engineering study to analyze risk of two waterways on Degraw Rd and Matthews Ave	0	0	1	1	0	0	1	0	0	1	0	1	0	0	5	Medium
RB-9 (Old Riverdale-14)	Repair or replacement of 4 early warning sirens in the borough	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	Medium
RB-10	Replace and expand early warning system (sirens)	1	1	1	1	0	0	1	0	0	1	1	1	0	0	8	Medium
RB-11	Secure mountainside on Overlook Ave and Rock Creek Tr to prevent additional rock slides	1	1	0	0	0	0	0	1	0	0	0	1	0	0	4	Low



Table 9.34-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
RB-12	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect structures from future damage, with repetitive loss and severe repetitive loss properties as a priority when applicable. <ul style="list-style-type: none"> See above table for description 	1	1	1	1	1	0	-1	1	1	0	-1	1	0	1	8	High
RB-13	Develop and implement a post-event damage assessment program, including the following elements: <ul style="list-style-type: none"> See above table for description 	0	0	1	1	1	0	1	1	1	1	1	1	0	0	9	High
RB-14	Support participation in the NFIP Community Rating System (CRS) program by attending CRS workshop(s) if offered within the county. See following related Community Assistance Visit (CAV) initiative.	0	0	1	1	1	0	-1	1	1	1	0	1	0	1	8	High
RB-15	Determine if a Community Assistance Visit (CAV) or Community Assistance Contact (CAC) is needed, and schedule if needed. This is a part of the process of joining CRS	0	0	1	0	1	0	1	0	0	1	0	1	0	0	5	High



Table 9.34-13. Summary of Prioritization of Actions

Mitigation Action / Project Number	Mitigation Action/Initiative	Life Safety	Property Protection	Cost-Effectiveness	Technical	Political	Legal	Fiscal	Environmental	Social	Administrative	Multi-Hazard	Timeline	Agency Champion	Other Community Objectives	Total	High / Medium / Low
RB-16	Have designated NFIP Floodplain Administrator (FPA), and other local officials who would benefit, become a Certified Floodplain Manager (CFM) through the Association of State Floodplain Managers (ASFPM) and New Jersey Association for Floodplain Management (NJAFM), and pursue relevant continuing education training such as FEMA Benefit-Cost Analysis (BCA) and Substantial Damage Estimation (SDE).	0	0	1	1	1	0	0	0	0	1	0	1	0	1	6	High
RB-17	Install backup power at the following critical facilities in the Borough <ul style="list-style-type: none"> Fire Headquarters Community Center (Borough Shelter) Water Dept. Pumping Station (Back-up) 	1	1	1	1	0	1	-1	1	1	-1	1	1	0	0	7	High
RB-18	Enhance/expand tree maintenance program	1	1	1	1	0	0	1	1	1	1	1	1	0	0	10	Medium
RB-19	Create/Enhance/Maintain Mutual Aid agreements with neighboring communities for continuity of operations	1	1	1	1	0	0	1	0	0	1	1	1	0	1	9	Medium

Note: Refer to Section 6 which contains the guidance on conducting the prioritization of mitigation actions.



9.34.7 Future Needs To Better Understand Risk/Vulnerability

None at this time.

9.34.8 Hazard Area Extent and Location

Hazard area extent and location maps have been generated for the Borough of Riverdale that illustrate the probable areas impacted within the municipality. These maps are based on the best available data at the time of the preparation of this plan, and are considered to be adequate for planning purposes. Maps have only been generated for those hazards that can be clearly identified using mapping techniques and technologies, and for which the Borough of Riverdale has significant exposure. These maps are illustrated in the hazard profiles within Section 5.4, Volume I of this Plan.

9.34.9 Additional Comments

None at this time.



Figure 9.34-1. Borough of Riverdale Hazard Area Extent and Location Map 1

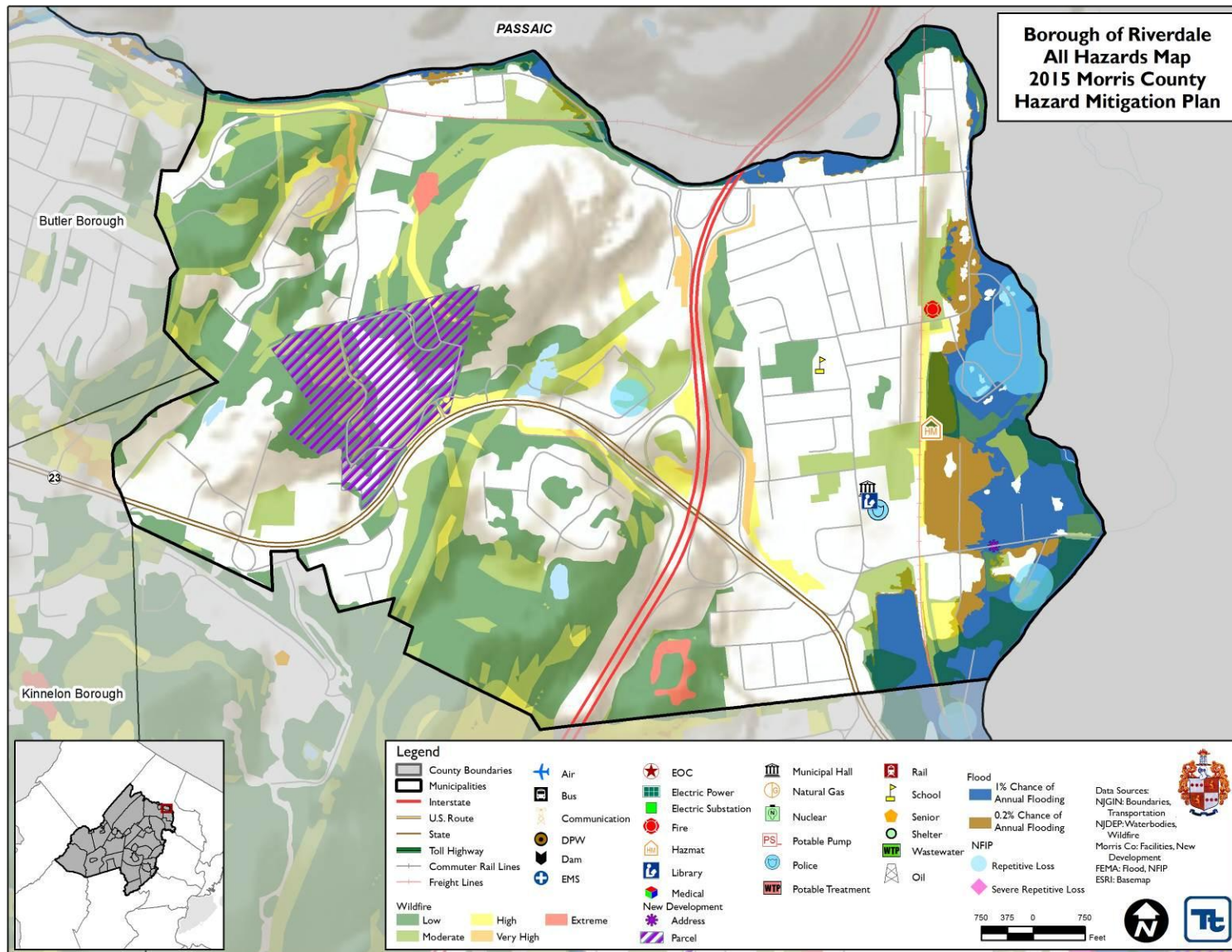
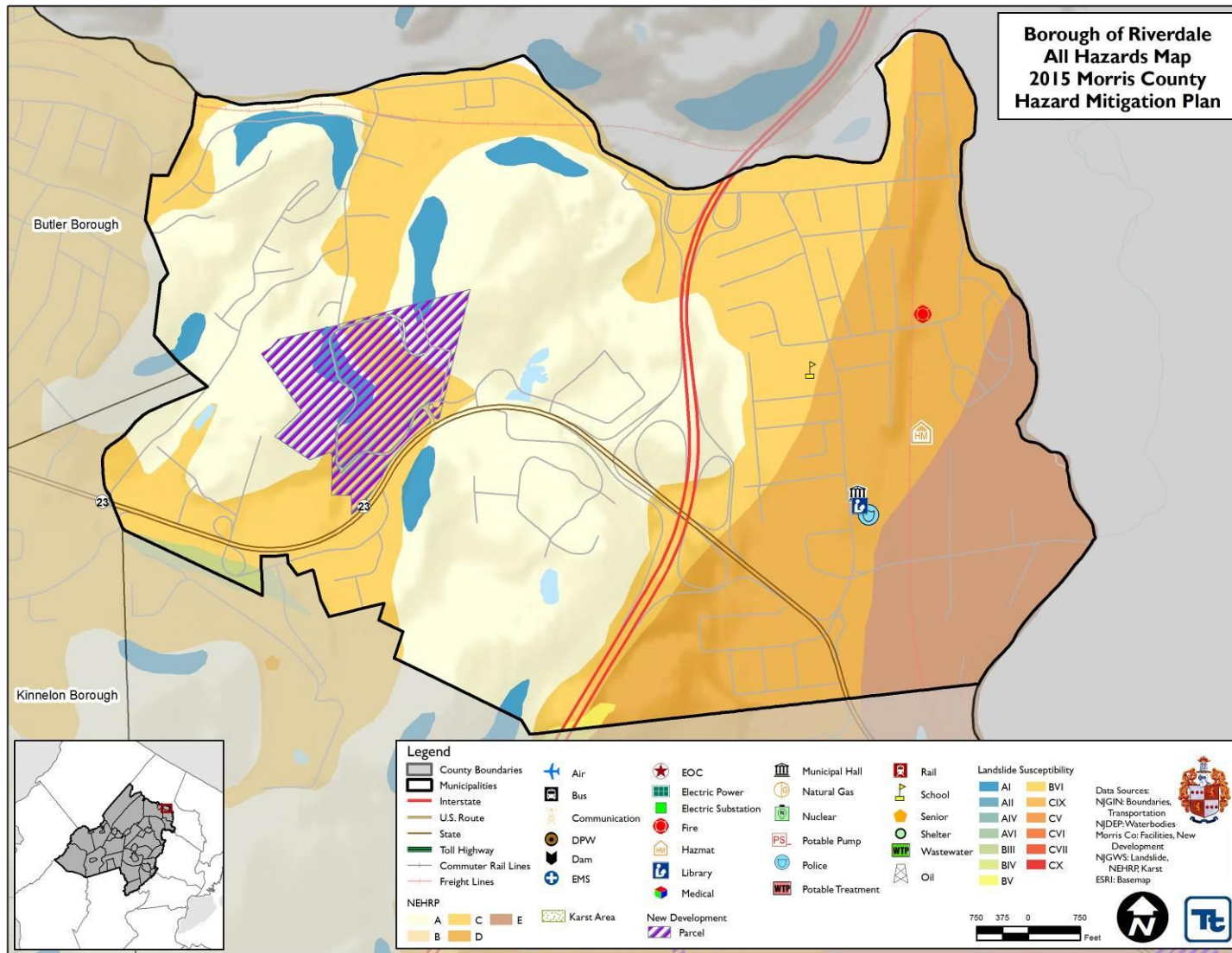




Figure 9.34-2. Borough of Riverdale Hazard Area Extent and Location Map 2





Action Number:

RB-1

Mitigation Action/Initiative:

Dredge the Pequannock River to mitigate flooding along roadways

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	Flooding along Williams Street, Harrison Road, Stratford Place, Riverview Terrace, Fernwood Street, Crescent Road, Hemlock Street Linden Street, Riverdale Road, Morris Ave and Kenner Court has caused significant damage and loss to the properties and owners on these streets.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Dredge Pequannock River
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to dredge the Pequannock River in order to mitigate the severity of flood events. By dredging the river, it will be able to a greater amount of stormwater runoff before reaching flood levels.
Action/Project Category	NSP, NR
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Allowing for the river to manage a greater amount of water can lessen the severity of flood events, and therefore reduce the chance of substantial damages and loss.
Estimated Cost	High
Priority*	High
Plan for Implementation	
Responsible Organization	Riverdale DPW
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-1

Mitigation Action/Initiative:

Dredge the Pequannock River to mitigate flooding along roadways

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Safety of public
Cost-Effectiveness	0	
Technical	0	
Political	0	
Legal	0	
Fiscal	0	
Environmental	0	
Social	0	
Administrative	0	
Multi-Hazard	1	Possibility of multiple hazards to include winter storm
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	4	
Priority (High/Med/Low)	Low	



Action Number: RB-2
Mitigation Action/Initiative: Acquisition and elevation of seven floodprone properties on Harrison Street.

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	Flooding along Harrison Street has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Acquire or elevate floodprone properties on Harrison Street
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to acquire or elevate these properties in order to reduce the damages and losses associated with flooding in this area. By acquiring these properties, the Borough can use the land for further mitigation or strategies. The elevations will bring the main floor of each property above the base flood elevation.
Action/Project Category	SIP, PP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing structure
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale Office of Emergency Management
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-2

Mitigation Action/Initiative:

Acquisition and elevation of seven floodprone properties on Harrison Street.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Removes property in perpetuity
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	Upon receipt of funding
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	Medium	



Action Number:

RB-4

Mitigation Action/Initiative:

Acquisition and elevation of two repetitive loss properties on Stratford Place.

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	Flooding along Stratford Place has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	4. Acquire or elevate floodprone properties on Stratford Place
	5. Do nothing – current problem continues
	6. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to acquire or elevate these properties in order to reduce the damages and losses associated with flooding in this area. By acquiring these properties, the Borough can use the land for further mitigation or strategies. An elevation will bring the main floor of each property above the base flood elevation.
Action/Project Category	SIP, PP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing structure
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale Office of Emergency Management
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-4

Mitigation Action/Initiative:

Acquisition and elevation of two repetitive loss properties on Stratford Place.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	Removes property
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	Supports flood victims
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	Medium	



Action Number:	RB-6
Mitigation Action/Initiative:	Acquisition and elevation of three floodprone properties on Williams Street.

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	Flooding along Williams Street has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	7. Acquire or elevate floodprone properties on Williams Street
	8. Do nothing – current problem continues
	9. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to acquire or elevate these properties in order to reduce the damages and losses associated with flooding in this area. By acquiring these properties, the Borough can use the land for further mitigation or strategies. An elevation will bring the main floor of each property above the base flood elevation.
Action/Project Category	SIP, PP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing structure
Benefits (losses avoided)	Recent damages: - \$\$\$
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale Office of Emergency Management
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number: RB-6
Mitigation Action/Initiative: Acquisition and elevation of three floodprone properties on Williams Street.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	Medium	



Action Number:	RB-7
Mitigation Action/Initiative:	Acquisition and elevation of two floodprone properties on Hamburg Turnpike.

Assessing the Risk	
Hazard(s) addressed:	Flooding, Severe Storm, Severe Winter Storm
Specific problem being mitigated:	Flooding along Hamburg Turnpike has caused significant damage and loss to these properties and the owners.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Acquire or elevate floodprone properties on Hamburg Turnpike
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to acquire or elevate these properties in order to reduce the damages and losses associated with flooding in this area. By acquiring these properties, the Borough can use the land for further mitigation or strategies. An elevation will bring the main floor of each property above the base flood elevation.
Action/Project Category	SIP, PP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing structure
Benefits (losses avoided)	High
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale Office of Emergency Management
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-7

Mitigation Action/Initiative:

Acquisition and elevation of two floodprone properties on Hamburg Turnpike.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	1	
Legal	1	
Fiscal	0	
Environmental	1	
Social	1	
Administrative	0	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	10	
Priority (High/Med/Low)	Medium	



Action Number: RB-9
Mitigation Action/Initiative: Repair or replacement of four early warning sirens in the Borough.

Assessing the Risk	
Hazard(s) addressed:	All-Hazard
Specific problem being mitigated:	Early response and action in regards to an emergency event is important to reduce potential damages and loss of life.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Repair or replace four early warning sirens
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is looking to repair or replace four early warning sirens. Functioning sirens will allow for residents to prepare and act accordingly to lessen the chance of damage or loss to physical property or life.
Action/Project Category	SIP, ES
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Future
Benefits (losses avoided)	High - The early warning sirens will allow residents and other members of the community to prepare for an event and prevent significant losses to property and life.
Estimated Cost	High
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale Office of Emergency Management
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-9

Mitigation Action/Initiative:

Repair or replacement of four early warning sirens in the Borough.

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Promotes life safety
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	1	
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	Will be used for multi hazards
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



Action Number: RB-10
Mitigation Action/Initiative: Replace and Expand Early Warning System(Sirens)

Assessing the Risk	
Hazard(s) addressed:	Dam Failure, Flooding, Severe Storm
Specific problem being mitigated:	Currently the Emergency Early warning system is only 30% operational with less than 40% Coverage.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Replace current warning sirens with new ones to complete the coverage of the Borough
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is replace obsolete and inoperable warning sirens, and install new sirens to complete the coverage of the Borough
Action/Project Category	SIP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Allow for early warning to preserve life and potentially save property by early evacuation.
Estimated Cost	Medium
Priority*	Medium
Plan for Implementation	
Responsible Organization	Riverdale OEM
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number: RB-10
Mitigation Action/Initiative: Replace and Expand Early Warning System(Sirens)

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	0	
Fiscal	1	
Environmental	0	
Social	0	
Administrative	1	
Multi-Hazard	1	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	8	
Priority (High/Med/Low)	Medium	



Action Number:

RB-11

Mitigation Action/Initiative:

Secure Mountainside on Overlook Ave and Rock Creek Trail to prevent additional rock slides

Assessing the Risk	
Hazard(s) addressed:	Geologic
Specific problem being mitigated:	Over the last few years during heavy rain storms and freeze/thaw cycles there have been rockslides blocking emergency vehicle access,. Each event could potentially impact life safety if cars or pedestrians are in the vicinity.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Secure two rock walls on Overlook Avenue and Rock Creek Trail
	2. Do nothing – current problem continues
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The Borough is requesting funds to secure 2 rock walls to mitigate additional landslides.
Action/Project Category	SIP
Goals/Objectives Met	G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	Medium - Reduce risk of injury/death due to rock slide. Eliminate risk of lack of access to the residents in the complex.
Estimated Cost	High
Priority*	Low
Plan for Implementation	
Responsible Organization	Riverdale DPW
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: Continue pursuing action



Action Number:

RB-11

Mitigation Action/Initiative:

Secure Mountainside on Overlook Ave and Rock Creek Tr to prevent additional rock slides

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Public safety issues
Property Protection	1	
Cost-Effectiveness	0	
Technical	0	
Political	0	
Legal	0	
Fiscal	0	
Environmental	1	Supports environment
Social	0	
Administrative	0	
Multi-Hazard	0	
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	4	
Priority (High/Med/Low)	Low	

**Action Number:**

RB-17

Mitigation Action/Initiative:

Install backup power at the Fire Headquarters, Community Center, and Water Dept. Pump Station

Assessing the Risk	
Hazard(s) addressed:	All-Hazard
Specific problem being mitigated:	High winds and winter storms have the potential to cause widespread loss of electrical power to buildings throughout the Borough. These facilities must remain open during emergency events for effective response and recovery.
Evaluation of Potential Actions/Projects	
Actions/Projects Considered (name of project and reason for not selecting):	1. Do nothing – Risk additional damages from an emergency event
	2. Solar Power – Too costly
	3. No other feasible options were identified
Action/Project Intended for Implementation	
Description of Selected Action/Project	The generator will allow the shelter remain functional to effectively aid residents that have been evacuated from their homes or have lost power.
Action/Project Category	SIP, PP
Goals/Objectives Met	G-3, G-4
Applies to existing, future, or not applicable	Existing
Benefits (losses avoided)	High
Estimated Cost	Medium-High
Priority*	High
Plan for Implementation	
Responsible Organization	Riverdale DPW
Local Planning Mechanism	TBD
Potential Funding Sources	FEMA, Municipal Budget
Timeline for Completion	Short (DOF)
Reporting on Progress	
Date of Status Report/ Report of Progress	Date: 7/12/2015 Progress on Action/Project: New Action



Action Number:

RB-17

Mitigation Action/Initiative:

Install backup power at the Fire Headquarters, Community Center, and Water Dept. Pump Station

Criteria	Numeric Rank (-1, 0, 1)	Provide brief rationale for numeric rank when appropriate
Life Safety	1	Supports continuity of operations
Property Protection	1	
Cost-Effectiveness	1	
Technical	1	
Political	0	
Legal	1	
Fiscal	-1	
Environmental	1	
Social	1	
Administrative	-1	
Multi-Hazard	1	All hazards
Timeline	1	
Local Champion	0	
Other Community Objectives	0	
Total	7	
Priority (High/Med/Low)	High	